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PATENT APPLICATION
09/488,395

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**In the United States Patent and Trademark Office
on Appeal from the Examiner to the Board
of Patent Appeals and Interferences**

In re Application of: Sitaraman, et al.
Serial No.: 09/488,395
Filing Date: January 20, 2000
Confirmation No. 4404
Group Art Unit: 2154
Examiner: Dustin Nguyen
Title: *System and Method for Determining Subscriber Information*

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Willie Jiles
Willie Jiles

Date: November 3, 2004

Appeal Brief

Appellants have appealed to the Board of Patent Appeals and Interferences ("Board") from the decision of the Examiner mailed April 7, 2004, finally rejecting all pending Claims 1-55. Appellants filed a Notice of Appeal on September 3, 2004. Appellants respectfully submit this Appeal Brief in triplicate with the statutory fee of \$340.00.

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Real Party In Interest

This Application is currently owned by Cisco Technology, Inc., as indicated by an Assignment recorded on April 10, 2000, in the Assignment Records of the United States Patent and Trademark Office ("PTO") at Reel 010692, Frames 0755-0759.

Related Appeals and Interferences

Appellants note that a Notice of Appeal was filed for U.S. Patent Application No. 09/488,394, which is related to the present Application, on September 3, 2004. Patent Application No. 09/488,394 shares common inventors and certain common subject matter with the present Application. Additionally, an Appeal Brief is being filed for Patent Application No. 09/488,394 concurrently with this Appeal Brief.

No other known appeals, interferences, or judicial proceedings will directly affect, be directly affected by, or have a bearing on the Board's decision regarding this Appeal.

Status of Claims

Claims 1-55 are pending in this Application, stand rejected pursuant to a Final Office Action mailed April 7, 2004 (the "Final Office Action"), and are all presented for appeal. All claims are shown in Appendix A, along with an indication of the status of these claims.

Status of Amendments

All amendments submitted by Appellants have been entered by the Examiner.

Summary of Claimed Subject Matter

In certain embodiments, as illustrated in FIGURE 1, the present invention comprises a communication system 10 that includes subscribers 12 coupled to access servers 18 using a first communication network 14. In general, access servers 18 initiate the identification of a subscriber 12 and, in response, communicate information to the subscriber 12. (*See* Page 7, Lines 1-8)

Subscribers 12 may comprise any suitable number and combination of communication devices, such as customer premises equipment, that employ any appropriate

communication techniques to communicate with access server 18 using communication network 14. In certain embodiments, subscribers 12 couple to a communication server 22, a LAN 30, a network interface 34, or any suitable combination of these, to couple to communication network 14. (*See* Page 7, Line 23 through Page 8, Line 4) Communication network 14 comprises a plurality of virtual circuits 16 that support communication between communication server 22, network interface 34, and access server 18. In a particular embodiment, communication network 14 is part of a wide area network (WAN) that supports any suitable protocol and/or communication technology. (*See* Page 8, Lines 5-19)

Access server 18 may comprise any number and combination of interfaces, switches, routers, or any other suitable communication devices and related software that terminates a pre-assigned virtual circuit 16 for each subscriber 12. Access server 18 is coupled to an information server 50 using a link 52. FIGURE 2 illustrates in greater detail an example access server 18. (*See* Page 8, Lines 20-26 and Page 12, Line 18 through Page 16, Line 13) Access servers 18 may be used to restrict access to information based upon the proper identification of subscribers 12. In general, system 10 assigns to each subscriber 12 a unique virtual circuit 16 that is to be used by the subscriber 12 to communicate with access server 18. When an access server 18 receives a communication from a particular subscriber 12, information server 50 identifies the subscriber 12 based, in part, upon the virtual circuit 16 assigned to the subscriber 12 and the virtual circuit 16 actually used to receive the communication from the subscriber 12. (*See* Page 9, Lines 1-15) Each virtual circuit 16 comprises a communication path between a particular subscriber 12 and an access server 18 that supports the appropriate communication technology of communication network 14. (*See* Page 9, Lines 16-26) As an example, a virtual circuit 16 in an ATM networking environment comprises a series of virtual path identifiers (VPI) and virtual channel identifiers (VCI). A unique virtual circuit 16 can therefore be assigned to each subscriber 12 by storing predetermined virtual circuit information (i.e., a virtual circuit identifier), such as VPI and VCI information defining the virtual circuit 16, in communication server 22, network interface 34, and the communication devices associated with network 14 and access server 18. (Page 9, Line 27 through Page 10, Line 4; Page 10, Lines 5-16)

Information server 50 comprises a processor 54 coupled to a memory 56. Memory 56 generally stores any suitable arrangement of information that supports the identification of subscribers 12 in system 10. For example, memory 56 includes identification table 58 having path information 60 and subscriber information 62 for subscribers 12 in system 10. Path information 60 comprises virtual circuit information identifying the unique virtual circuits 16 assigned to subscribers 12 (e.g., virtual circuit identifiers), access server information (e.g., access server identifiers), interface information, user information, and/or any other type of information used to identify subscribers 12. Subscriber information 62 comprises address information, configuration information, and/or any other suitable information used to upgrade, monitor, modify, or otherwise operate subscribers 12. (*See* Page 10, Line 17 through Page 11, Line 3)

In operation, access server 18 supports the provisioning of services to subscribers 12 in system 10. In particular, access server 18 receives a communication from a particular subscriber 12 using a particular one of the virtual circuits 16 associated with communication network 14. In one example, a subscriber 12 requests subscriber information 62. Prior to communicating subscriber information 62 to the subscriber 12, access server 18 and/or information server 50 identify subscriber 12 based, in part, upon path information 60 associated with the particular subscriber 12 and the particular virtual circuit 16 actually used by the access server 18 to receive the communication from the particular subscriber 12. (*See* Page 11, Lines 16-34)

A problem with prior communication systems is that a particular subscriber 12 may assume the identity of another subscriber 12, such as by using a misappropriated user name and password, and thereby pirate the services of the other subscriber 12. A particular advantage of the present invention is that path information 60 for a particular subscriber 12 is information that is generally not discoverable by another subscriber 12 and, therefore, is not easily misappropriated by other subscribers 12. System 10, therefore, overcomes the disadvantages of prior communication systems by identifying a particular subscriber 12 based, in part, upon path information 60 and the particular virtual circuit 16 used by access server 18 to receive a communication from the particular subscriber 12. Accordingly, system

10 identifies subscribers 12 to support provisioning the proper services to the proper subscribers 12. (*See* Page 12, Lines 1-17)

FIGURE 2 illustrates example access server 18 in more detail. Virtual circuits 16 of communication network 14 couple to one or more interfaces 70, which may be coupled to other suitable components. (*See* Page 12, Lines 18-29) A controller 82 manages the overall operation of access server 18. A memory 86 coupled to controller 82 stores program instructions 88 and an access server identifier 90. (*See*, Page 12, Line 30 through Page 13, Line 5) Controller 82 accesses and executes program instructions 88 to generate and communicate a request 104, such as an identification request, to information server 50. Access server identifier 90 comprises any suitable information uniquely identifying access server 18 to the other components of system 10. (*See* Page 13, Lines 6-13; Page 13, Line 23 through Page 14, Line 3)

In operation, access server 18 receives a communication 102 from subscriber 12 using a particular virtual circuit 16. The virtual circuit identifier 96 for the virtual circuit 16 on which communication 102 was received is determined by switch fabric 74. Controller 82 receives and examines communication 102 to determine if it contains a request for services. For example, communication 102 may include a request for subscriber information 62. (*See* Page 14, Line 26 through Page 15, Line 2) If communication 102 includes a request for services, controller 82 executes program instructions 88 to generate a request 104 for communication to information server 50 to identify the subscriber 12 that sent communication 102. Controller 82 generates request 104 according to any suitable communication protocols used by information server 50. Request 104 includes any appropriately formatted or configured combination of request parameters, such as an appropriate access server identifier 90, interface identifier 94, and virtual circuit identifier 96. (*See* Page 15, Lines 3-13)

Information server 50 receives request 104 and identifies subscriber 12 based upon path information 60 and the request parameters included in request 104. In particular, information server 50 identifies subscriber 12 if an entry exists in identification table 58 that is indexed by path information 60 corresponding to the request parameters included in

request 104. For example, if processor 54 locates an entry in identification table 58 indexed by path information 60 corresponding to the access server identifier 90, the interface identifier 94, and the virtual circuit identifier 96 communicated in request 104, then processor 54 identifies subscriber 12. (*See* Page 15, Lines 14-25) Upon identifying subscriber 12, information server 50 and/or access server 18 provide the services requested by subscriber 12 in communication 102. For example, information server 50 and/or access server 18 communicates particular subscriber information 62 to subscriber 12 using, for example, communication network 14. (*See* Page 15, Lines 26-31) As described above, while in prior communication systems a particular subscriber may pirate the services of another subscriber by misappropriating the other subscriber's user name and password, system 10 identifies subscribers 12 based upon "trusted" information to which subscribers 12 cannot readily gain access, such as path information 60, access server identifiers 90, interface identifiers 94, and virtual circuit identifiers 96. In this respect, subscriber 12 cannot access services designated for other subscribers 12 by misappropriating the user name and password of the other subscribers 12. (*See* Page 4, Line 23 through Page 5, Line 7; Page 16, Lines 3-13)

FIGURE 3 illustrates the contents of an example identification table 58 stored in memory 56 of information server 50. Each entry of identification table 58 includes path information 60 and subscriber information 62 for each subscriber 12. In particular, path information 60 includes virtual circuit information 110, interface information 112, and access server information 114. In one embodiment, path information 60 further includes user information 116. (*See* FIGURE 3 and Page 16, Line 14 through Page 19, Line 28) Subscriber information 62, in example identification table 58, comprises address information 118 (e.g., one or more network addresses used by subscriber 12 to communicate with communication network 20) and configuration information 120 (e.g., any suitable information used to upgrade, monitor, modify, or otherwise operate subscribers 12) that may be communicated to a corresponding subscriber 12 upon identification. (*See* Page 17, Line 24 through Page 18, Line 2) Information server 50 identifies a particular subscriber 12 based upon path information 60 and the request parameters communicated by access server 18 in request 104.

FIGURE 4 illustrates the contents of an example routing table 98 associated with route processors 76 of access server 18. (*See* FIGURE 4 and Page 19, Line 29 through Page

21, Line 18) FIGURE 5 illustrates a flowchart of an exemplary method according to the present invention. (See FIGURE 5 and Page 21, Line 19 through Page 22, Line 26)

Statement of Issues

1. Are Claims 1-5, 8-23, 26-40, 43-45, and 48-55 unpatentable under 35 U.S.C. § 103(a) over U.S. Patent 6,023,474 to Gardner, et al. ("*Gardner*") in view of U.S. Patent 5,999,518 to Nattkemper, et al. ("*Nattkemper*")?

2. Are Claims 6-7, 24-25, 41-42, and 46-47 unpatentable under 35 U.S.C. § 103(a) over *Gardner* in view of *Nattkemper* and in further view of U.S. Patent 6,446,200 to Ball ("*Ball*")?

Grouping of Claims

Appellants have made an effort to group claims to reduce the burden on the Board. In the Argument section of this Appeal Brief, where appropriate, Appellants present reasons why particular claims subject to a ground of rejection are separately patentable from other claims subject to the same ground of rejection.

To reduce the number of groups and thereby reduce the burden on the Board, Appellants do not argue individually every claim that recites patentable distinctions over the references cited by the Examiner, particularly in light of the clear allowability of Appellants' independent claims.

Appellants have concluded that the claims may be grouped together as follows for purposes of this Appeal:

1. Group 1 may include Claims 1, 4, 6-9, 12, 15-17, 20, 22, 24-27, 30, 33-35, 38-39, 41-44, 46-48, and 51-53 (Claim 1 will be addressed below and the remaining claims of Group 1 may be deemed to stand or fall together with Claim 1);

2. Group 2 may include Claims 2, 13, 21, 31, and 49 (Claim 2 will be addressed below and the remaining claims of Group 2 may be deemed to stand or fall together with Claim 2);

3. Group 3 may include Claims 3, 14, 32, and 50 (Claim 3 will be addressed below and the remaining claims of Group 3 may be deemed to stand or fall together with Claim 3);

4. Group 4 may include Claims 5, 23, 40, and 45 (Claim 5 will be addressed below and the remaining claims of Group 4 may be deemed to stand or fall together with Claim 5);

5. Group 5 may include Claims 10, 18, 28, 36, and 54 (Claim 10 will be addressed below and the remaining claims of Group 5 may be deemed to stand or fall together with Claim 10); and

6. Group 6 may include Claims 11, 19, 29, 37, and 55 (Claim 11 will be addressed below and the remaining claims of Group 6 may be deemed to stand or fall together with Claim 11).

Argument

The rejection of Claims 1-5, 8-23, 26-40, 43-45, and 48-55 under 35 U.S.C. § 103(a) as being unpatentable over the Examiner's proposed *Gardner-Nattkemper* combination is improper and should be reversed by the Board. The rejection of Claims 6-7, 24-25, 41-42, and 46-47 under 35 U.S.C. § 103(a) as being unpatentable over the Examiner's proposed *Gardner-Nattkemper-Ball* combination is improper and should be reversed by the Board.

I. The Claims are Patentable over the Proposed *Gardner-Nattkemper* Combination

A. Overview

Claims 1-5, 8-23, 26-40, 43-45, and 48-55 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the Examiner's proposed *Gardner-Nattkemper* combination. A copy of *Gardner* is attached as Appendix B and a copy of *Nattkemper* is attached as Appendix C. Appellants respectfully submit that the Examiner's proposed *Gardner-Nattkemper* combination fails to support the obviousness rejections of these claims. Appellants respectfully submit that these rejections are improper and should be reversed by the Board.

B. Standard

The question raised under 35 U.S.C. § 103 is whether the prior art taken as a whole would suggest the claimed invention taken as a whole to one of ordinary skill in the art at the

time of the invention. *See* 35 U.S.C. § 103(a). Accordingly, even if all elements of a claim are disclosed in various prior art references, which is certainly not the case here as discussed below, the claimed invention taken as a whole cannot be said to be obvious without some reason given in the prior art why one of ordinary skill at the time of the invention would have been prompted to modify the teachings of a reference or combine the teachings of multiple references to arrive at the claimed invention.

The M.P.E.P. sets forth the strict legal standard for establishing a *prima facie* case of obviousness based on modification or combination of prior art references. "To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references where combined) must teach or suggest all the claim limitations." M.P.E.P. § 2142, 2143. The teaching, suggestion, or motivation for the modification or combination and the reasonable expectation of success must both be found in the prior art and cannot be based on an applicant's disclosure. *See Id.* (citations omitted). "Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art" at the time of the invention. M.P.E.P. § 2143.01. Even the fact that references *can* be modified or combined does not render the resultant modification or combination obvious unless the prior art teaches or suggests the desirability of the modification or combination. *See Id.* (citations omitted). Moreover, "To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. All words in a claim must be considered in judging the patentability of that claim against the prior art." M.P.E.P. § 2143.03 (citations omitted).

The governing Federal Circuit case law makes this strict legal standard even more clear.¹ According to the Federal Circuit, "a showing of a suggestion, teaching, or motivation

¹ Note M.P.E.P. 2145 X.C. ("The Federal Circuit has produced a number of decisions overturning obviousness rejections due to a lack of suggestion in the prior art of the desirability of combining references.").

to combine or modify prior art references is an essential component of an obviousness holding.” *In re Sang-Su Lee*, 277 F.3d 1338, 1343, 61 U.S.P.Q.2d 1430, 1433 (Fed. Cir. 2002) (quoting *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1124-25, 56 U.S.P.Q.2d 1456, 1459 (Fed. Cir. 2000)). “Evidence of a suggestion, teaching, or motivation . . . may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, the nature of the problem to be solved.” *In re Dembiczak*, 175 F.3d 994, 999, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). However, the “range of sources available . . . does not diminish the requirement for actual evidence.” *Id.* Although a prior art device “may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so.” *In re Mills*, 916 F.2d at 682, 16 U.S.P.Q.2d at 1432. *See also In re Rouffet*, 149 F.3d 1350, 1357, 47 U.S.P.Q.2d 1453, 1457-58 (Fed. Cir. 1998) (holding a *prima facie* case of obviousness not made where the combination of the references taught every element of the claimed invention but did not provide a motivation to combine); *In Re Jones*, 958 F.2d 347, 351, 21 U.S.P.Q.2d 1941, 1944 (Fed. Cir. 1992) (“Conspicuously missing from this record is any evidence, other than the PTO’s speculation (if that can be called evidence) that one of ordinary skill in the herbicidal art would have been motivated to make the modification of the prior art salts necessary to arrive at” the claimed invention.). Even a determination that it would have been obvious to one of ordinary skill in the art at the time of the invention to try the proposed modification or combination is not sufficient to establish a *prima facie* case of obviousness. *See In re Fine*, 837 F.2d 1071, 1075, 5 U.S.P.Q.2d 1596, 1599 (Fed. Cir. 1988).

In addition, the M.P.E.P. and the Federal Circuit repeatedly warn against using an applicant's disclosure as a blueprint to reconstruct the claimed invention. For example, the M.P.E.P. states, “The tendency to resort to ‘hindsight’ based upon applicant's disclosure is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art.” M.P.E.P. § 2142. The governing Federal Circuit cases are equally clear. “A critical step in analyzing the patentability of claims pursuant to [35 U.S.C. § 103] is casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. . . . Close adherence to this methodology is especially

important in cases where the very ease with which the invention can be understood may prompt one 'to fall victim to the insidious effect of a hindsight syndrome wherein that which only the invention taught is used against its teacher.'" *In re Kotzab*, 217 F.3d 1365, 1369, 55 U.S.P.Q.2d 1313, 1316 (Fed. Cir. 2000) (citations omitted). In *In re Kotzab*, the Federal Circuit noted that to prevent the use of hindsight based on the invention to defeat patentability of the invention, the court requires the Examiner to show a sufficient motivation in the prior art to combine the references that allegedly create the case of obviousness. *See id.* *See also, e.g., Grain Processing Corp. v. American Maize-Products*, 840 F.2d 902, 907, 5 U.S.P.Q.2d 1788, 1792 (Fed. Cir. 1988). Similarly, in *In re Dembiczak*, the Federal Circuit reversed a finding of obviousness by the Board, explaining that the required evidence of such a teaching, suggestion, or motivation is essential to avoid impermissible hindsight reconstruction of an applicant's invention:

Our case law makes clear that the best defense against the subtle but powerful attraction of hind-sight obviousness analysis is *rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references*. Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability—the essence of hindsight.

175 F.3d at 999, 50 U.S.P.Q.2d at 1617 (emphasis added) (citations omitted).

C. Group 1 (Claims 1, 4, 6-9, 12, 15-17, 20, 22, 24-27, 30, 33-35, 38-39, 41-44, 46-48, and 51-53)

Claims 1, 4, 8-9, 12, 15-17, 20, 22, 26-27, 30, 33-35, 38-39, 43-44, 48, and 51-53 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the proposed *Gardner-Nattkemper* combination.² Appellants respectfully submit that these claims are clearly patentable over the proposed *Gardner-Nattkemper* combination. Thus, Appellants respectfully submit that these rejections are improper and should be reversed by the Board.

Claims 1, 4, 8-9, 12, 15-17, 20, 22, 26-27, 30, 33-35, 38-39, 43-44, 48, and 51-53 are separately patentable from every other claim subject to the same ground of rejection. These claims recite limitations that are substantially different from limitations recited in other

² Claims 6-7, 24-25, 41-42, and 46-47 are addressed below.

claims. In addition, claims excluded from Group 1 that are subject to the same ground of rejection and that depend on independent Claims 1, 12, 20, 30, 38, 43, and 48, respectively, recite patentable distinctions over the prior art beyond those recited in independent Claims 1, 12, 20, 30, 38, 43, and 48 and cannot be properly grouped with independent Claims 1, 12, 20, 30, 38, 43, and 48 for purposes of this Appeal.

Independent Claim 1 of the present application, for example, recites:

A system for determining subscriber information, comprising:
an access server coupled to a plurality of subscribers using a communication network and operable to receive a communication from a particular subscriber using a particular one of a plurality of virtual circuits associated with the communication network;
a memory coupled to the access server and operable to store:
subscriber information for the plurality of subscribers; and
path information for the plurality of subscribers, wherein the subscriber information for the particular subscriber is indexed by the path information for the particular subscriber, the path information for the particular subscriber identifying a virtual circuit that is pre-assigned to the particular subscriber for communicating with the access server; and
a processor coupled to the memory and operable to:
compare the path information of the particular subscriber to the particular virtual circuit used to receive the communication from the particular subscriber; and
determine subscriber information for communication to the particular subscriber based on the comparison.

In contrast, *Gardner* merely discloses a system for interfacing a GR-303 system with a broadband system, which can be an ATM system. (Abstract) The invention can process the GR-303 signaling to select ATM connections and then inter-work the GR-303 connections with the selected ATM connections. (Abstract)

Appellants respectfully submit that the Examiner's proposed *Gardner-Nattkemper* combination fails to support the obviousness rejections for at least two reasons. First, assuming for the sake of argument that *Gardner* could properly be combined with *Nattkemper*, the proposed combination would still fail to teach, suggest, or disclose each and every limitation specifically recited in the rejected claims. Second, the required teaching, suggestion, or motivation to combine *Nattkemper* with *Gardner* is lacking.

**The Proposed Combination of References Fails to Teach, Suggest,
or Disclose Limitations Recited in Appellants' Claims**

Even assuming for the sake of argument that there was the required teaching, suggestion, or motivation to combine *Gardner* with *Nattkemper* in the manner the Examiner proposes, the proposed *Gardner-Nattkemper* combination would still fail to teach, suggest, or disclose each and every limitation specifically recited in the rejected claims. Appellants address example distinctions below.

1. The Proposed *Gardner-Nattkemper* Combination Fails to Teach, Suggest, or Disclose an "Access Server" as Recited in Claim 1

Gardner fails to teach, suggest, or disclose “an access server coupled to a plurality of subscribers using a communication network and operable to receive a communication from a particular subscriber *using a particular one of a plurality of virtual circuits associated with the communication network*,” as recited in Claim 1. The Examiner apparently equates the broadband system interface 300 disclosed in *Gardner* with the access server recited in Claim 1. (See Final Office Action, Page 2) As disclosing “operable to receive a communication from a particular subscriber *using a particular one of a plurality of virtual circuits associated with the communication network*,” the Examiner cites mux 350 disclosed in *Gardner*. Appellants respectfully submit that *Gardner* does not support this interpretation because mux 350 does not “receive a communication from a particular subscriber *using a particular one of a plurality of virtual circuits associated with the communication network*,” as recited in Claim 1.

As disclosed in *Gardner*, mux 350 is contained within broadband system interface 300. (See Figure 3) According to *Gardner*, “[m]ux 350 is operational to receive GR-303 formatted communications over connections 330 and 332 and links 331 and 333. The bearer channels from connections 330 and 332 and the signaling channels from links 331 and 333 are in the well known DS0 format.” (Column 4, Line 64 through Column 5, Line 1) *Gardner* discloses that mux 350 of broadband system interface 300 receives calls from callers (e.g., users of telephones 210-215) in DS0 format via remote digital terminals 220 and 222. (See Figure 3)

According to *Gardner*, “mux 350 is also operational to *convert* DS0s into ATM cells with selected Virtual Path Identifiers/Virtual Channel Identifiers (VPI/VCIs).” (Column 5, Lines 14-16; emphasis added) Thus, *Gardner* merely discloses that mux 350, which is a part of broadband system interface 300 (which the Examiner equates with the access server recited in Claim 1), receives DS0 signals and *converts* those DS0 signals into ATM cells. However, *Gardner* fails to teach, suggest, or disclose that its broadband system interface 300 is “operable to receive a communication from a particular subscriber using a particular one of a plurality of virtual circuits associated with the communication network,” as recited in Claim 1. *Nattkemper* fails to account for these deficiencies of *Gardner*.

2. The Proposed *Gardner-Nattkemper* Combination Fails to Teach, Suggest, or Disclose a Memory Operable to Store “Subscriber Information” and “Path Information” as Recited in Claim 1

Gardner fails to teach, suggest, or disclose “a memory coupled to the access server and operable to store . . . subscriber information for the plurality of subscribers” and “path information for the plurality of subscribers . . . the path information for the particular subscriber identifying a virtual circuit that is pre-assigned to the particular subscriber for communicating with the access server,” as recited in Claim 1. In the Final Office Action, the Examiner apparently equated resource device 1070 disclosed in *Gardner* to the memory recited in Claim 1. (Final Office Action, Page 2) Appellants respectfully submit that *Gardner* does not support this interpretation and presented the following argument in the Response to Final.

First, the portion of *Gardner* cited by the Examiner as disclosing that the memory is “operable to store . . . subscriber information for the plurality of subscribers,” as recited in Claim 1 (*see* Final Office Action, Page 2 citing Column 9, Lines 8-23), mentions nothing about subscriber information for the plurality of subscribers. The timing functions and other functionality of resource device 1070 disclosed in *Gardner* are line-specific functions that have nothing to do with “subscriber information for the plurality of subscribers,” let alone “a memory operable to . . . store subscriber information for the plurality of subscribers,” as recited in Claim 1.

Second, the Examiner attempts to equate multiple components of *Gardner* with “a memory coupled to the access server and operable to store . . . subscriber information for the plurality of subscribers” and “path information for the plurality of subscribers . . . the path information for the particular subscriber identifying a virtual circuit that is pre-assigned to the particular subscriber for communicating with the access server,” as recited in Claim 1. For example, as discussed above, the Examiner apparently equated resource device 1070 disclosed in *Gardner* to the memory recited in Claim 1 for purposes of a memory operable to store subscriber information for the plurality of subscribers.” As disclosing “a memory . . . operable to store . . . path information for the plurality of subscribers . . . the path information for the particular subscriber identifying a virtual circuit that is pre-assigned to the particular subscriber for communicating with the access server,” as recited in Claim 1, the Examiner referred to mux 350 disclosed in *Gardner* and Column 5, Lines 14-26. (See Final Office Action, Page 2) Thus, it appears that the Examiner is cherry-picking portions of *Gardner* in an attempt to recreate Appellants’ claims.

In any event, the portions of *Gardner* cited by the Examiner as disclosing that mux 350 stores “path information for the plurality of subscribers” and that “the path information for the particular subscriber identif[ies] a virtual circuit that is pre-assigned to the particular subscriber for communicating with the access server” fail to disclose these limitations.

For example, as discussed above, *Gardner* discloses that mux 350 is operational to convert DS0s into ATM cells with selected VPIs/VCIs. (Column 5, Lines 14-16; emphasis added) *Gardner* discloses that these ATM cells are transmitted over connection 340 to an ATM cross-connect device that routes the cells according to their VPI/VCI. (Column 5, Lines 17-20) According to *Gardner*, “[s]ince DS0s are bi-directional, a companion VPI/VCI will typically be pre-assigned to the selected VPI/VCI **to provide a call connection back to the caller**. The mux would convert ATM cells from this companion VPI/VCI into the return path of the DS0. Mux 350 makes the DS0/ATM conversions in response to control instructions from signaling processor 360 that are received over link 352.” (Column 5, Lines 20-26; emphasis added) While the term “pre-assigned” is used in close proximity to the term VPI/VCI in *Gardner*, a closer examination of *Gardner* reveals that *Gardner* fails to teach, suggest, or disclose “a memory . . . operable to store . . . path information for the plurality of

subscribers . . . the path information for the particular subscriber identifying a virtual circuit that is pre-assigned to the particular subscriber for communicating with the access server,” as recited in Claim 1. In particular, the pre-assignment disclosed in *Gardner* has nothing to do with “a virtual circuit that is pre-assigned to the particular subscriber for communicating with the access server,” as recited in Claim 1.

As can be seen from the above-cited portions of *Gardner*, mux 350 receives communications in the form of a DS0. Mux 350 then *converts* the DS0 into ATM cells with a selected VPI/VCI for communication to an ATM cross-connect device. A companion VPI/VCI is pre-assigned *to the selected VPI/VCI*, so that when ATM cells are received from this companion VPI/VCI, mux 350 can covert those ATM cells into the return path of the DS0, presumably so mux 350 can send those converted ATM cells on that return path. There simply is no pre-assignment of a virtual circuit to a particular subscriber for communicating with the access server in *Gardner*. In fact, *Gardner* discloses that “[a]dvantageously, the VPI/VCI is selected on a call-by-call basis by the signaling processor,” *eliminating any suggestion that they are pre-assigned to particular subscribers as recited in Claim 1*. (See Column 6, Lines 63-65; emphasis added) Furthermore, while the DS0s may be specific to a particular telephone for a particular call, there is no disclosure, teaching or suggestion in *Gardner* that the DS0 format of the signals received from the remote digital terminals (via connections 330 and 332 and links 331 and 333) are pre-assigned to particular subscribers. In fact, the DS0s can apparently be used by multiple telephones. (See Figure 3 and Column 4, Line 63 through Column 5, Line 13) This further illustrates that *Gardner* fails to disclose, teach, or suggest “a memory . . . operable to store . . . path information for the plurality of subscribers . . . the path information for the particular subscriber identifying a virtual circuit that is pre-assigned to the particular subscriber for communicating with the access server,” as recited in Claim 1. *Nattkemper* fails to account for these deficiencies of *Gardner*.

3. The Proposed *Gardner-Nattkemper* Combination Fails to Teach, Suggest, or Disclose "Subscriber Information" Indexed by "Path Information"

Gardner fails to teach, suggest, or disclose “wherein the subscriber information for the particular subscriber is indexed by the path information for the particular subscriber,” as recited in Claim 1.

First, as illustrated above, *Gardner* fails to disclose a memory operable to store “subscriber information” and “path information,” as recited in Claim 1. Thus, *Gardner* necessarily fails to teach, suggest, or disclose “wherein the subscriber information for the particular subscriber is indexed by the path information for the particular subscriber,” as recited in Claim 1.

Second, the portion of *Gardner* cited by the Examiner in the Final Office Action as disclosing subscriber information indexed by path information fails to teach, suggest, or disclose this limitation. *Gardner* discloses various tables in Figures 16-23. The Examiner specifically refers to the text associated with Figure 16. (See Final Office Action, Page 3 citing Column 15, Lines 14-34) *Gardner* discloses that for originating circuit processing (i.e., processing for the origin of the call), the associated point code is used to enter the table. *Gardner* further discloses that for terminating circuit processing (i.e., processing for the destination of the call), the trunk group number is used to enter the table. (See Column 15, Lines 19-23) Assuming for the sake of argument only that the table illustrated in Figure 16 includes subscriber information (with which Appellants do not necessarily agree), at best this subscriber information would apparently be indexed by point codes (for originating calls) and trunk group numbers for terminating calls. The supposed subscriber information is not indexed by path information *that identifies a particular virtual circuit that is pre-assigned to the particular subscriber for communicating with the access server*. Thus, *Gardner* fails to teach, suggest, or disclose “wherein the subscriber information for the particular subscriber is indexed by the path information for the particular subscriber, the path information identifying a virtual circuit that is pre-assigned to the particular subscriber for communicating with the access server,” as recited in Claim 1. *Nattkemper* fails to account for these deficiencies of *Gardner*.

4. The Proposed *Gardner-Nattkemper* Combination Fails to Teach, Suggest, or Disclose a Processor Operable to "Compare the Path Information Identifying the Virtual Circuit Assigned to the Particular Subscriber to the Particular Virtual Circuit Used to Receive the Communication from the Particular Subscriber"

The Examiner apparently equates signaling processor 360 disclosed in *Gardner* with the processor recited in Claim 1. (Final Office Action, Page 3) However, the Examiner

acknowledges, and Appellants agree, that *Gardner* fails to disclose a processor “operable to compare the path information of the particular subscriber to the particular virtual circuit used to receive the communication from the particular subscriber,” as recited in Claim 1. (Final Office Action, Page 3) The Examiner argues that *Nattkemper* discloses this limitation. Appellants respectfully disagree.

Nattkemper merely discloses a distributed telecommunications switching subsystem that receives and distributes data packets passed between a plurality of switching subsystems or channel banks and a data packet switch. (Abstract) Each channel bank has a stored list of addresses. (Abstract) When a channel bank receives a data packet, it compares the address of the data packet to its stored list of addresses and transmits the data packet to another channel bank if the address of the data packet does not correspond to any of the addresses in its stored list of addresses. (Abstract) The data packet is passed on until it reaches a channel bank with a matching address or else it is appropriately handled by a last channel bank in the chain. (Abstract) If the address of the data packet matches an address in its stored list of addresses, the channel bank passes the data packet through a subscriber interface card to a customer premises equipment unit corresponding to the address of the data packet. (Abstract)

According to *Nattkemper*, ATM cells include information such as virtual path (VP) and virtual circuit (VC) routing information, and information concerning their termination. Each switching unit analyzes and evaluates the information included with each ATM cell to perform the above-discussed comparison with its stored list of addresses. The Examiner has cited no portion of *Nattkemper* that teaches, suggests, or discloses path information that “**identifies] a particular virtual circuit that is pre-assigned to the particular subscriber for communication with the access server,**” as recited in Claim 1. In other words, the Examiner has cited no portion of *Nattkemper* that discloses that the VCs associated with the ATM cells received by the switching units are **pre-assigned to particular subscribers from which the data packets are received.**

Thus, while *Nattkemper* may disclose comparing addressing information of a received data packet to a stored list of addresses of a switching unit for purposes of determining if the switching unit should process the data packet, *Nattkemper* fails to teach, suggest, or disclose

a processor “operable to compare *the path information of the particular subscriber to the particular virtual circuit used to receive the communication from the particular subscriber*,” as recited in Claim 1. The path information for the particular subscriber recited in Claim 1 identifies “*a particular virtual circuit that is pre-assigned to the particular subscriber for communicating with the access server*.” According to the system disclosed in *Nattkemper*, a particular switching unit may be assigned to handle data packets received using a particular VPI/VCI, it does not teach, suggest, or disclose “*a particular virtual circuit that is pre-assigned to the particular subscriber for communicating with the access server*,” as recited in Claim 1. Therefore, at a minimum, *Nattkemper* fails to teach, suggest, or disclose the path information recited in Claim 1 and, thus, necessarily fails to teach, suggest, or disclose a processor “operable to compare *the path information of the particular subscriber to the particular virtual circuit used to receive the communication from the particular subscriber*,” as recited in Claim 1.

5. The Proposed *Gardner-Nattkemper* Combination Fails to Teach, Suggest, or Disclose a Processor Operable to “Determine Subscriber Information for Communication to the Particular Subscriber Based on the Comparison”

As noted above, the Examiner apparently equates signaling processor 360 disclosed in *Gardner* with the processor recited in Claim 1. (Final Office Action, Page 3) However, the Examiner acknowledges, and Appellants agree, that *Gardner* fails to disclose a processor operable to “determine subscriber information for communication to the particular subscriber based on the comparison,” as recited in Claim 1. The Examiner argues that *Nattkemper* discloses this limitation. Appellants respectfully disagree.

First, because *Nattkemper* fails to teach, suggest, or disclose the comparison recited in Claim 1, as discussed above, *Nattkemper* necessarily fails to teach, suggest, or disclose a processor operable to “determine subscriber information for communication to the particular subscriber *based on the comparison*,” as recited in Claim 1. Additionally, the portion of *Nattkemper* cited by the Examiner as disclosing this limitation (*see* Final Office Action, Page 3 citing Column 6, Lines 8-35) mentions nothing about “subscriber information,” let alone “determin[ing] subscriber information for communication to the particular subscriber,” as recited in Claim 1. Thus, *Nattkemper* fails to teach, suggest, or disclose a processor operable

to “determine subscriber information for communication to the particular subscriber based on the comparison,” as recited in Claim 1.

For at least these reasons, the proposed *Gardner-Nattkemper* combination fails to disclose, teach, or suggest each and every limitation recited in independent Claim 1, and thus fails to support the obviousness rejection of independent Claims 1 and its dependent Claims. For analogous reasons, the proposed *Gardner-Nattkemper* combination fails to support the obviousness rejections of independent Claims 12, 20, 30, 38, 43, and 48 and their dependent claims. These claims are therefore patentable over the proposed *Gardner-Nattkemper* combination. Appellants respectfully submit that these rejections are improper and should be reversed by the Board.

The Proposed Combination of References is Improper

Appellants respectfully submit that the Examiner’s proposed combination of *Gardner* and *Nattkemper* is improper because the Examiner has not shown the required teaching, suggestion, or motivation in *Gardner*, *Nattkemper*, or knowledge generally available to those of ordinary skill in the art at the time of the invention to combine *Nattkemper* with *Gardner* in the manner the Examiner proposes. The rejected claims are also allowable for at least this reason.

Appellants reiterate the legal standard incumbent on the Examiner for proving a *prima facie* case of obviousness, as defined by the M.P.E.P. and governing Federal Circuit decisions.

Appellants respectfully submit that the Examiner’s conclusory assertion that it would have been obvious to combine the teachings of *Gardner* with the teachings of *Nattkemper* to arrive at Appellants’ invention is entirely insufficient to support a *prima facie* case of obviousness under 35 U.S.C. § 103(a) under the M.P.E.P. and the governing Federal Circuit case law.

With regard to the proposed *Gardner-Nattkemper* combination, the Examiner indicated in the Final Office Action that “[i]t would have been obvious to a person of skill in

the art at the time the invention was made to combine the teachings of Gardner and Nattkemper because Nattkemper's teaching would allow [one] to determine the connection path so that communication can be established in a proper manner." (Final Office Action, Page 3). First, even assuming this were true and that this motivation was actually present in the references, it would have no bearing on Appellants' claims. The Examiner did nothing more than propose an alleged advantage (and one which Appellants do not admit could even be achieved by combining these references in the manner the Examiner proposed) of combining *Gardner* with *Nattkemper*. The Examiner did not point to any portions of either *Gardner* or *Nattkemper* that would teach, suggest, or motivate one of ordinary skill in the art at the time of invention to incorporate the broadband telecommunications system interface disclosed in *Gardner* with the distributed telecommunications switching system and method disclosed in *Nattkemper*. It certainly would not have been obvious to one of ordinary skill in the art at the time of the invention, based solely on the prior art, *to even attempt* to incorporate into the broadband system interface disclosed in *Gardner* such a distributed telecommunications switching system as the one disclosed in *Nattkemper*. Even more clearly, it certainly would not have been obvious to one of ordinary skill in the art at the time of the invention, based solely on the prior art, *to actually* incorporate into the broadband system interface disclosed in *Gardner* such a distributed telecommunications switching system, which would be required to establish a *prima facie* case of obviousness under the M.P.E.P. and the governing Federal Circuit case law.

Appellants respectfully note, "[T]he factual inquiry whether to combine references must be thorough and searching." *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351-52, 60 U.S.P.Q.2d 1001, 1008 (Fed. Cir. 2001). Thus, the burden is on the Examiner to identify concrete evidence in the record to support his conclusion that it would have been obvious to modify the teachings of the cited references to achieve the claimed invention. *See, In re Kotzab*, 217 F.3d 1365, 1370, 55 U.S.P.Q.2d 1313, 1316-17 (Fed. Cir. 2000). The Examiner's conclusory assertion that it would have been obvious to combine *Gardner* with *Nattkemper* to "allow [one] to determine the connection path so that communication can be established in a proper manner" fails to provide a thorough and searching factual inquiry and does not identify any concrete evidence in the record for combining these references. The additional purported motivations to combine *Nattkemper* with *Gardner* provided by the

Examiner with respect to certain dependent claims (*see e.g.*, Claims 4 and 12; Final Office Action, Pages 4-6) are similarly conclusory and deficient.

Accordingly, since the prior art fails to provide the required teaching, suggestion, or motivation to combine *Gardner* with *Nattkemper* in the manner the Examiner proposes, Appellants respectfully submit that the Examiner's conclusions set forth in the Final Office Action and in the Advisory Action fall well short of the requirements set forth in the M.P.E.P. and the governing Federal Circuit case law for demonstrating a *prima facie* case of obviousness. Thus, Appellants respectfully submit that the Examiner's proposed combination of *Gardner* with *Nattkemper* appears to be merely an attempt, with the benefit of hindsight, to reconstruct Appellants' claims and is unsupported by the teachings of *Gardner* and *Nattkemper*. Appellants respectfully submit that the rejection must therefore be reversed.

Additionally, as demonstrated above, Appellants respectfully submit that *Gardner* is wholly inadequate as a reference against independent Claim 1. Thus, even if *Nattkemper* did disclose the portions of Claim 1 that the Examiner suggests (which it does not), and even assuming for the sake of argument that there was the required teaching, suggestion, or motivation to combine *Gardner* with *Nattkemper* as the Examiner proposes (which there is not), the proposed *Gardner-Nattkemper* combination would still fail to disclose, teach, or suggest the limitations specifically recited in independent Claim 1, as is required under the M.P.E.P. and the governing Federal Circuit cases for a *prima facie* case of obviousness.

For at least these additional reasons, the proposed *Gardner-Nattkemper* combination fails support the obviousness rejection of independent Claims 1, 12, 20, 30, 38, 43, and 48, and their dependent claims. These claims are therefore patentable over the proposed *Gardner-Nattkemper* combination. Appellants respectfully submit that these rejections are improper and should be reversed by the Board.

Dependent Claims 6-7, 24-25, 41-42, and 46-47

Claims 6-7, 24-25, 41-42, and 46-47 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the Examiner's proposed *Gardner-Nattkemper-Ball* combination. A copy of *Ball* is attached as Appendix D.

Ball discloses a system for collecting and aggregating data from network entities for a data consuming application. (Abstract) The system includes a data collector layer to receive network flow information from the network entities and to produce records based on the information. (Abstract) The system also includes a flow aggregation layer fed from the data collection layer and coupled to a storage device. (Abstract) The flow aggregation layer receives records produced by the data collector layer and aggregates the received records. (Abstract) According to *Ball*, the system can also include an equipment interface layer coupled to the data collector layer and a distribution layer to obtain selected information stored in the storage device and to distribute the select information to a requesting, data consuming application. (Abstract)

Dependent Claims 6-7, 24-25, 41-42, and 46-47 depend from independent Claims 1, 20, 38, and 43, respectively, which Appellants have shown above to be clearly patentable over the proposed *Gardner-Nattkemper* combination. *Ball* fails to make up for the deficiencies of the *Gardner-Nattkemper* combination discussed above with reference to independent Claims 1, 20, 38, and 43. Thus, dependent Claims 6-7, 24-25, 41-42, and 46-47 are allowable at least because these claims depend from allowable independent claims. In addition, dependent Claims 6-7, 24-25, 41-42, and 46-47 recite further patentable distinctions over the proposed *Gardner-Nattkemper-Ball* combination. To avoid burdening the record and in view of the clear allowability of independent Claims 1, 20, 38, and 43, Appellants do not specifically discuss these distinctions in this Appeal Brief.

For at least these reasons, the proposed *Gardner-Nattkemper-Ball* combination fails to support the obviousness rejection of dependent Claims 6-7, 24-25, 41-42, and 46-47. These claims are therefore patentable over the proposed *Gardner-Nattkemper-Ball* combination. Appellants respectfully submit that these rejections are improper and should be reversed by the Board.

D. Group 2 (Claims 2, 13, 21, 31, and 49)

Claims 2, 13, 21, 31, and 49 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the proposed *Gardner-Nattkemper* combination. Appellants respectfully

submit that these claims are clearly patentable over the proposed *Gardner-Nattkemper* combination. Thus, Appellants respectfully submit that these rejections are improper and should be reversed by the Board.

Claims 2, 13, 21, 31, and 49 are separately patentable from every other claim subject to the same ground of rejection. These claims recite limitations that are substantially different from limitations recited in the claims of other groups and cannot be properly grouped with the claims of other groups for purposes of this Appeal. For example, these claims recite patentable distinctions over the references beyond those recited in independent Claims 1, 12, 20, 30, and 48, and patentable distinctions over the references different from those recited in other dependent claims.

Dependent Claims 2, 13, 21, 31, and 49 depend from independent Claims 1, 12, 20, 30, and 48, respectively, which Appellants have shown above to be clearly patentable over the proposed *Gardner-Nattkemper* combination, and are allowable for at least this reason. Furthermore, in addition to those reasons discussed above with reference to independent Claims 1, 12, 20, 30, and 48, dependent Claims 2, 13, 21, 31, and 49 recite further patentable distinctions over the proposed *Gardner-Nattkemper* combination.

For example, dependent Claim 2 recites that:

- the access server comprises one of a plurality of access servers coupled to the processor;
- the path information for the particular subscriber further identifies an access server assigned to the particular subscriber; and
- the processor is further operable to determine the subscriber information for communication to the particular subscriber based upon the path information for the particular subscriber and an identifier of the particular access server coupled to the particular subscriber.

The proposed *Gardner-Nattkemper* combination fails to teach, suggest, or disclose these limitations.

For example, *Gardner* fails to teach, suggest, or disclose that “the access server comprises one of a plurality of access servers coupled to the processor,” as recited in Claim 2. As discussed above, the Examiner apparently equates broadband system interface 300

disclosed in *Gardner* with the access server recited in Claim 1. Figure 11 of *Gardner*, whose associated text the Examiner cites as disclosing this element of Claim 2 (*see* Final Office Action, Page 4; Column 9, Lines 28-39), depicts another broadband system interface, broadband system interface 1100. Appellants assume, for the sake of argument, that for purposes of rejecting Claim 2 the Examiner now equates broadband system interface 1100 with Appellants' recited access server. Yet nowhere does the cited portion teach, suggest, or disclose a plurality of either broadband system interfaces 300 or broadband system interfaces 1100. (*See* Column 9, Lines 28-29) Thus, the cited portion of *Gardner* fails to disclose, teach, or suggest "the access server comprises one of a plurality of access servers coupled to the processor," as recited in Claim 2. *Nattkemper* fails to account for this deficiency of *Gardner*.

As another example, *Gardner* fails to teach, suggest, or disclose that "the path information for the particular subscriber further identifies an access server assigned to the particular subscriber," as recited in Claim 2. As discussed above, the Examiner apparently equates broadband system interface 300 (or broadband system interface 1100) disclosed in *Gardner* with the access server recited in Claims 1 and 2. Nowhere, however, do the portions of *Gardner* cited by the Examiner in rejecting this element of Claim 2 (*see* Final Office Action, Page 4; Column 6, Lines 6-8; and Column 10, Lines 45-53) teach, suggest, or disclose an identification of an "access server assigned to a particular subscriber," let alone that "the path information for the particular subscriber further identifies an access server assigned to the particular subscriber," as recited in Claim 2. *Nattkemper* fails to account for this deficiency of *Gardner*.

As another example, *Gardner* fails to teach, suggest, or disclose that "the processor is further operable to determine the subscriber information for communication to the particular subscriber based upon the path information for the particular subscriber and an identifier of the particular access server coupled to the particular subscriber," as recited in Claim 2.

First, at least because *Gardner* fails to teach, suggest, or disclose that "the path information for the particular subscriber further identifies an access server assigned to the particular subscriber," as recited in Claim 2, *Gardner* necessarily fails to teach, suggest, or

disclose that “the processor is further operable to determine the subscriber information for communication to the particular subscriber *based upon* the path information for the particular subscriber *and an identifier of the particular access server coupled to the particular subscriber*,” as recited in Claim 2.

Second, the portion of *Gardner* cited by the Examiner as disclosing this element of Claim 2 (*see* Final Office Action, Page 4 and Column 11, Line 37 through Column 12, Line 51) makes no mention of determining the subscriber information [for communication to the particular subscriber] based upon the path information for the particular subscriber and an identifier of the particular broadband system interface 300 (or 1100) coupled to the particular subscriber,” which would be required based on the Examiner’s equation of broadband system interface 300 (or 1100) with the access server recited in Claims 1 and 2. Thus, *Gardner* fails to teach, suggest, or disclose that “the processor is further operable to determine the subscriber information for communication to the particular subscriber based upon the path information for the particular subscriber and an identifier of the particular access server coupled to the particular subscriber,” as recited in Claim 2.

Nattkemper fails to account for this deficiency of *Gardner*.

For at least these reasons, the proposed *Gardner-Nattkemper* combination fails support the obviousness rejection of dependent Claim 2. For analogous reasons, the proposed *Gardner-Nattkemper* combination fails to support the obviousness rejections of dependent claims 13, 21, 31, and 49. These claims are therefore patentable over the proposed *Gardner-Nattkemper* combination. Appellants respectfully submit that these rejections are improper and should be reversed by the Board.

E. Group 3 (Claims 3, 14, 32, and 50)

Claims 3, 14, 32, and 50 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the proposed *Gardner-Nattkemper* combination. Appellants respectfully submit that these claims are clearly patentable over the proposed *Gardner-Nattkemper* combination. Thus, Appellants respectfully submit that these rejections are improper and should be reversed by the Board.

Claims 3, 14, 32, and 50 are separately patentable from every other claim subject to the same ground of rejection. These claims recite limitations that are substantially different from limitations recited in the claims of other groups and cannot be properly grouped with the claims of other groups for purposes of this Appeal. For example, these claims recite patentable distinctions over the references beyond those recited in independent Claims 1, 12, 30, and 48, and patentable distinctions over the references different from those recited in other dependent claims.

Dependent Claims 3, 14, 32, and 50 depend from independent Claims 1, 12, 30, and 48, respectively, which Appellants have shown above to be clearly patentable over the proposed *Gardner-Nattkemper* combination, and are allowable for at least this reason. Furthermore, in addition to those reasons discussed above with reference to independent Claims 1, 12, 30, and 48, dependent Claims 3, 14, 32, and 50 recite further patentable distinctions over the proposed *Gardner-Nattkemper* combination.

For example, dependent Claim 3 recites that the access server comprises:

- an interface coupled to the particular subscriber using the particular virtual circuit; and
- a controller coupled to the interface and operable to communicate a request identifying the particular virtual circuit that couples the interface and the particular subscriber.

The proposed *Gardner-Nattkemper* combination fails to teach, suggest, or disclose these limitations.

For example, *Gardner* fails to teach, suggest, or disclose that the access server comprises “an interface coupled to the particular subscriber using the particular virtual circuit,” as recited in Claim 3. As discussed above, the Examiner apparently equates broadband system interface 300 disclosed in *Gardner* with the access server recited in Claims 1 and 3. However, *Gardner* fails to disclose, teach, or suggest that its broadband system interface 300 comprises “an interface coupled to the particular subscriber *using the particular virtual circuit [that is used to receive a communication from the particular subscriber, as recited in Claim 1],*” as recited in Claim 3. Instead, as discussed above with

reference to Claim 1, mux 350 of broadband system interface 300 receives communications in the form of a DS0. Mux 350 then *converts* the DS0 into ATM cells with a selected VPI/VCI for communication to an ATM cross-connect device. There simply is no teaching, suggestion, or disclosure in *Gardner* that mux 350 or any other component of broadband system interface 300 is coupled to the particular subscriber using the particular virtual circuit that is used to received a communication from the particular subscriber.

As another example, for substantially similar reasons, *Gardner* fails to teach, suggest, or disclose that the access server comprises “a controller coupled to the interface and *operable to communicate a request identifying the particular virtual circuit that couples the interface and the particular subscriber*,” as recited in Claim 3.

Nattkemper fails to account for this deficiency of *Gardner*.

For at least these reasons, the proposed *Gardner-Nattkemper* combination fails support the obviousness rejection of dependent Claim 3. For analogous reasons, the proposed *Gardner-Nattkemper* combination fails to support the obviousness rejections of dependent Claims 14, 32, and 50. These claims are therefore patentable over the proposed *Gardner-Nattkemper* combination. Appellants respectfully submit that these rejections are improper and should be reversed by the Board.

F. Group 4 (Claims 5, 23, 40, and 45)

Claims 5, 23, 40, and 45 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the proposed *Gardner-Nattkemper* combination. Appellants respectfully submit that these claims are clearly patentable over the proposed *Gardner-Nattkemper* combination. Thus, Appellants respectfully submit that these rejections are improper and should be reversed by the Board.

Claims 5, 23, 40, and 45 are separately patentable from every other claim subject to the same ground of rejection. These claims recite limitations that are substantially different from limitations recited in the claims of other groups and cannot be properly grouped with the claims of other groups for purposes of this Appeal. For example, these claims recite

patentable distinctions over the prior art beyond those recited in independent Claims 1, 20, 38, and 43, and patentable distinctions over the prior art different from those recited in other dependent claims.

Dependent Claims 5, 23, 40, and 45 depend from independent Claims 1, 20, 38, and 43, respectively, which Appellants have shown above to be clearly patentable over the proposed *Gardner-Nattkemper* combination, and are allowable for at least this reason. Furthermore, in addition to those reasons discussed above with reference to independent Claims 1, 20, 38, and 43, dependent Claims 5, 23, 40, and 45 recite further patentable distinctions over the proposed *Gardner-Nattkemper* combination.

For example, dependent Claim 5 (which depends from dependent Claim 3) recites that the request that the controller of the access server is operable to communicate comprises:

- interface information identifying the interface coupled to the particular subscriber;
- virtual circuit information identifying the particular virtual circuit; and
- access server information identifying the access server.

The proposed *Gardner-Nattkemper* combination fails to teach, suggest, or disclose these limitations.

For example, *Gardner* fails to teach, suggest, or disclose that the request comprises “interface information identifying the interface coupled to the particular subscriber,” as recited in Claim 5. Claim 3 (from which Claim 5 depends) recites that the access server comprises “an interface coupled to the particular subscriber using the particular virtual circuit [that is used to receive a communication from the particular subscriber, as recited in Claim 1].” As demonstrated above, *Gardner* fails to teach, suggest, or disclose these limitations as recited in Claim 3. Thus, even assuming for the sake of argument only that *Gardner* disclosed any sort of request similar to the request recited in Claims 3 and 5 (which it does not), *Gardner* necessarily fails to teach, suggest, or disclose that the request comprises “interface information identifying the interface coupled to the particular subscriber [using the particular virtual circuit that is used to receive the communication for the particular subscriber, as recited in Claims 1 and 3], as recited in Claim 5.

As another example, *Gardner* fails to teach, suggest, or disclose that the request comprises “virtual circuit information identifying the particular virtual circuit,” as recited in Claim 5. Independent Claim 1 (from which Claim 5 depends via dependent Claim 3) recites that the access server is operable to “receive a communication from a particular subscriber using a particular one of a plurality of virtual circuits associated with the communication network. As repeatedly demonstrated above, *Gardner* fails to teach, suggest, or disclose these limitations. Thus, even assuming for the sake of argument only that *Gardner* disclosed any sort of request similar to the request recited in Claims 3 and 5 (which it does not), *Gardner* necessarily fails to teach, suggest, or disclose that the request comprises “virtual circuit information identifying the particular virtual circuit [that is used to received the communications for the particular subscriber],” as recited in Claim 5.

As another example, *Gardner* fails to teach, suggest, or disclose that the request comprises “access server information identifying the access server,” as recited in Claim 5. As discussed above, the Examiner apparently equates broadband system interface 300 (or broadband system interface 1100) disclosed in *Gardner* with the access server recited in Claim 1. Nowhere, however, do the portions of *Gardner* cited by the Examiner teach, suggest, or disclose an identification of an access server.” Thus, even assuming for the sake of argument only that *Gardner* disclosed any sort of request similar to the request recited in Claims 3 and 5 (which it does not), *Gardner* necessarily fails to teach, suggest, or disclose that the request comprises “access server information identifying the access server,” as recited in Claim 5.

For at least these reasons, the proposed *Gardner-Nattkemper* combination fails support the obviousness rejection of dependent Claim 5. For analogous reasons, the proposed *Gardner-Nattkemper* combination fails to support the obviousness rejections of dependent Claims 23, 40, and 45. These claims are therefore patentable over the proposed *Gardner-Nattkemper* combination. Appellants respectfully submit that these rejections are improper and should be reversed by the Board.

G. Group 5 (Claims 10, 18, 28, 36, and 54)

Claims 10, 18, 28, 36, and 54 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the proposed *Gardner-Nattkemper* combination. Appellants respectfully submit that these claims are clearly patentable over the proposed *Gardner-Nattkemper* combination. Thus, Appellants respectfully submit that these rejections are improper and should be reversed by the Board.

Claims 10, 18, 28, 36, and 54 are separately patentable from every other claim subject to the same ground of rejection. These claims recite limitations that are substantially different from limitations recited in the claims of other groups and cannot be properly grouped with the claims of other groups for purposes of this Appeal. For example, these claims recite patentable distinctions over the prior art beyond those recited in independent Claims 1, 12, 20, 30, and 48, and patentable distinctions over the prior art different from those recited in other dependent claims.

Dependent Claims 10, 18, 28, 36, and 54 depend from independent Claims 1, 12, 20, 30, and 48, respectively, which Appellants have shown above to be clearly patentable over the proposed *Gardner-Nattkemper* combination, and are allowable for at least this reason. Furthermore, in addition to those reasons discussed above with reference to independent Claims 1, 12, 20, 30, and 48, dependent Claims 10, 18, 28, 36, and 54 recite further patentable distinctions over the proposed *Gardner-Nattkemper* combination.

For example, dependent Claim 10 recites that “the subscriber information comprises information used to configure a communication device associated with the particular subscriber.” The portion of *Gardner* cited by the Examiner as disclosing the limitations recited in Claim 10 (*see* Final Office Action, Page 6; Column 9, Lines 1-23) does not mention “information used to configure a communication device associated with the particular subscriber.” Moreover, Claim 1 (from which Claim 10 depends) recites that “the subscriber information for the particular subscriber is indexed by the path information for the particular subscriber.” *Gardner* certainly does not teach, suggest, or disclose that subscriber information comprising information used to configure a communication device associated with the particular subscriber is indexed by path information for the particular subscriber.

Nattkemper fails to account for these deficiencies of *Gardner*.

For at least these reasons, the proposed *Gardner-Nattkemper* combination fails support the obviousness rejection of dependent Claim 10. For analogous reasons, the proposed *Gardner-Nattkemper* combination fails to support the obviousness rejections of dependent Claims 18, 28, 36, and 54. These claims are therefore patentable over the proposed *Gardner-Nattkemper* combination. Appellants respectfully submit that these rejections are improper and should be reversed by the Board.

H. Group 6 (Claims 11, 19, 29, 37, and 55)

Claims 11, 19, 29, 37, and 55 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the proposed *Gardner-Nattkemper* combination. Appellants respectfully submit that these claims are clearly patentable over the proposed *Gardner-Nattkemper* combination. Thus, Appellants respectfully submit that these rejections are improper and should be reversed by the Board.

Claims 11, 19, 29, 37, and 55 are separately patentable from every other claim subject to the same ground of rejection. These claims recite limitations that are substantially different from limitations recited in the claims of other groups and cannot be properly grouped with the claims of other groups for purposes of this Appeal. For example, these claims recite patentable distinctions over the prior art beyond those recited in independent Claims 1, 12, 20, 30, and 48, and patentable distinctions over the prior art different from those recited in other dependent claims.

Dependent Claims 11, 19, 29, 37, and 55 depend from independent Claims 1, 12, 20, 30, and 48, respectively, which Appellants have shown above to be clearly patentable over the proposed *Gardner-Nattkemper* combination, and are allowable for at least this reason. Furthermore, in addition to those reasons discussed above with reference to independent Claims 1, 12, 20, 30, and 48, dependent Claims 11, 19, 29, 37, and 55 recite further patentable distinctions over the proposed *Gardner-Nattkemper* combination.

For example, dependent Claim 11 recites that the subscriber information “comprises at least one Internet protocol address for communication to the particular subscriber.”

The proposed *Gardner-Nattkemper* combination fails to teach, suggest, or disclose these limitations. The Examiner acknowledges, and Appellants agree, that *Gardner* fails to disclose the limitations recited in Claim 4. (See Final Office Action, Page 6) In fact, *Gardner* does not even mention Internet protocol addresses. However, the Examiner argues that *Nattkemper* does disclose these limitations. Appellants respectfully disagree.

One portion of *Nattkemper* cited by the Examiner as disclosing the limitations of Claim 11 merely states, “It will be understood that the distributed telecommunications switching subsystem and method described herein may also be employed to route digital or analog information encoded in other formats, such as Transmission Control Protocol/Internet Protocol data packets.” (Column 54, Lines 44-49) It appears to Appellants that the Examiner merely performed a keyword search looking for the words “Internet protocol.” However, the fact that *Nattkemper* contemplates its system being used in the context of Internet protocol packets does not mean that *Nattkemper* teaches, suggests, or discloses subscriber information comprising “at least one Internet protocol address for communication to the particular subscriber,” as recited in Claim 11. Additionally, Claim 1 (from which Claim 11 depends) recites that “the subscriber information for the particular subscriber is indexed by the path information for the particular subscriber.” *Nattkemper* certainly does not teach, suggest, or disclose that subscriber information comprising at least one Internet protocol address for communication to the particular subscriber is indexed by path information for the particular subscriber.

For at least these reasons, the proposed *Gardner-Nattkemper* combination fails support the obviousness rejection of dependent Claim 11. For analogous reasons, the proposed *Gardner-Nattkemper* combination fails to support the obviousness rejections of dependent Claims 19, 29, 37, and 55. These claims are therefore patentable over the proposed *Gardner-Nattkemper* combination. Appellants respectfully submit that these rejections are improper and should be reversed by the Board.

Conclusion

Appellants have demonstrated that the present invention, as claimed, is clearly distinguishable over the prior art cited by the Examiner. Therefore, Appellants respectfully request the Board to reverse the final rejections and instruct the Examiner to issue a Notice of Allowance with respect to all pending claims.

Appellants have enclosed a check in the amount of \$340.00 for this Appeal Brief. Appellants believe no additional fees are due. However, the Commissioner is hereby authorized to charge any additional fees and credit any overpayments to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,

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Appendix A

1. (Previously presented) A system for determining subscriber information, comprising:

an access server coupled to a plurality of subscribers using a communication network and operable to receive a communication from a particular subscriber using a particular one of a plurality of virtual circuits associated with the communication network;

a memory coupled to the access server and operable to store:

subscriber information for the plurality of subscribers; and

path information for the plurality of subscribers, wherein the subscriber information for the particular subscriber is indexed by the path information for the particular subscriber, the path information for the particular subscriber identifying a virtual circuit that is pre-assigned to the particular subscriber for communicating with the access server; and

a processor coupled to the memory and operable to:

compare the path information of the particular subscriber to the particular virtual circuit used to receive the communication from the particular subscriber; and

determine subscriber information for communication to the particular subscriber based on the comparison.

2. (Previously presented) The system of Claim 1, wherein:

the access server comprises one of a plurality of access servers coupled to the processor;

the path information for the particular subscriber further identifies an access server assigned to the particular subscriber; and

the processor is further operable to determine the subscriber information for communication to the particular subscriber based upon the path information for the particular subscriber and an identifier of the particular access server coupled to the particular subscriber.

3. (Original) The system of Claim 1, wherein the access server comprises:
an interface coupled to the particular subscriber using the particular virtual circuit;
and

a controller coupled to the interface and operable to communicate a request
identifying the particular virtual circuit that couples the interface and the particular
subscriber.

4. (Previously presented) The system of Claim 3, wherein:
the interface comprises a plurality of network line cards;
the path information for the particular subscriber further identifies a network line card
assigned to the particular subscriber; and

the processor is further operable to determine the subscriber information for
communication to the particular subscriber based upon the path information for the particular
subscriber and an identifier of a particular network line card coupled to the particular
subscriber.

5. (Original) The system of Claim 3, wherein the request comprises:
interface information identifying the interface coupled to the particular subscriber;
virtual circuit information identifying the particular virtual circuit; and
access server information identifying the access server.

6. (Original) The system of Claim 3, wherein the request comprises a RADIUS
protocol request.

7. (Original) The system of Claim 3, wherein the request comprises a trivial file
transfer protocol request.

8. (Previously presented) The system of Claim 1, wherein the virtual circuit pre-
assigned to the particular subscriber is associated with the particular subscriber using a virtual
path identifier and a virtual channel identifier.

9. (Previously presented) The system of Claim 1, wherein the path information for the particular subscriber comprises a virtual path identifier and a virtual channel identifier associated with the virtual circuit assigned to the particular subscriber.

10. (Original) The system of Claim 1, wherein the subscriber information comprises information used to configure a communication device associated with the particular subscriber.

11. (Original) The system of Claim 1, wherein the subscriber information comprises at least one Internet protocol address for communication to the particular subscriber.

12. (Previously presented) A method for determining subscriber information, comprising:

receiving a communication from a particular one of a plurality of subscribers using a particular one of a plurality of virtual circuits associated with a communication network;

storing subscriber information for the plurality of subscribers;

storing path information for the plurality of subscribers, wherein the subscriber information for the particular subscriber is indexed by the path information for the particular subscriber, the path information for the particular subscriber identifying a virtual circuit that is pre-assigned to the particular subscriber for communicating with the access server;

comparing the path information for the particular subscriber to the particular virtual circuit used to receive the communication from the particular subscriber; and

determining the subscriber information for communication to the particular subscriber based on the comparison.

13. (Previously presented) The method of Claim 12, wherein:
the particular virtual circuit couples the particular subscriber to a particular one of a plurality of access servers;
the path information for the particular subscriber further identifies an access server assigned to the particular subscriber; and
the step of determining further comprises determining the subscriber information for the particular subscriber based upon the path information for the particular subscriber and an identifier of the particular access server coupled to the particular subscriber.

14. (Original) The method of Claim 13, wherein the particular access server comprises:
an interface coupled to the particular subscriber using the particular virtual circuit;
and
a controller coupled to the interface.

15. (Previously presented) The method of Claim 14, wherein:
the interface comprises a plurality of network line cards;
the path information for the particular subscriber further identifies a network line card assigned to the particular subscriber; and
the step of determining further comprises determining the subscriber information for communication to the particular subscriber based upon the path information for the particular subscriber and an identifier of a particular network line card coupled to the particular subscriber.

16. (Previously presented) The method of Claim 12, wherein the virtual circuit pre-assigned to the particular subscriber is associated with the particular subscriber using a virtual path identifier and a virtual channel identifier.

17. (Previously presented) The method of Claim 12, wherein the path information for the particular subscriber comprises a virtual path identifier and a virtual channel identifier associated with the virtual circuit assigned to the particular subscriber.

18. (Original) The method of Claim 12, wherein the subscriber information comprises information used to configure a communication device associated with the particular subscriber.

19. (Original) The method of Claim 12, wherein the subscriber information comprises at least one Internet protocol address for communication to the particular subscriber.

20. (Previously presented) An information server, comprising:
a memory operable to store:
 subscriber information for a plurality of subscribers; and
 path information for the plurality of subscribers, wherein the subscriber information for a particular subscriber in the plurality of subscribers is indexed by the path information for the particular subscriber, the path information for the particular subscriber identifying a particular virtual circuit that is pre-assigned to the particular subscriber for communicating with an access server; and
a processor coupled to the memory and operable to:
 compare the path information for the particular subscriber to a particular virtual circuit that couples the particular subscriber to the access server; and
 determine the subscriber information for communication to the particular subscriber based on the comparison.

21. (Previously presented) The information server of Claim 20, wherein:
the path information for the particular subscriber further identifies an access server assigned to the particular subscriber; and
the processor is further operable to determine the subscriber information for communication to the particular subscriber based upon the path information for the particular subscriber and an identifier of the access server coupled to the particular subscriber.

22. (Previously presented) The information server of Claim 20, wherein:
the path information for the particular subscriber further identifies a network line card of the access server assigned to the particular subscriber; and
the processor is further operable to determine the subscriber information for communication to the particular subscriber based upon the path information for the particular subscriber and an identifier of the network line card.

23. (Original) The information server of Claim 20, wherein the processor determines the subscriber information for communication to the particular subscriber in response to receiving a request comprising:

interface information identifying an interface of the access server coupled to the particular subscriber;

virtual circuit information identifying the particular virtual circuit; and

access server information identifying the access server.

24. (Original) The information server of Claim 23, wherein the request comprises a RADIUS protocol request.

25. (Original) The information server of Claim 23, wherein the request comprises a trivial file transfer protocol request.

26. (Previously presented) The information server of Claim 20, wherein the virtual circuit pre-assigned to the particular subscriber is associated with the particular subscriber using a virtual path identifier and a virtual channel identifier.

27. (Previously presented) The information server of Claim 20, wherein the path information for the particular subscriber comprises a virtual path identifier and a virtual channel identifier associated with the virtual circuit assigned to the particular subscriber.

28. (Original) The information server of Claim 20, wherein the subscriber information comprises information used to configure a communication device associated with the particular subscriber.

29. (Original) The information server of Claim 20, wherein the subscriber information comprises at least one Internet protocol address for communication to the particular subscriber.

30. (Previously presented) A method for determining subscriber information, comprising:

receiving a request identifying a particular one of a plurality of virtual circuits associated with a communication network, wherein the particular virtual circuit is used by an access server to receive a communication from a particular one of a plurality of subscribers;

storing subscriber information for the plurality of subscribers;

storing path information for the plurality of subscribers, wherein the subscriber information for the particular subscriber is indexed by the path information for the particular subscriber, the path information for the particular subscriber identifying a virtual circuit that is pre-assigned to the particular subscriber for communicating with the access server;

comparing the path information for the particular subscriber to the particular virtual circuit used by the access server to receive the communication from the particular subscriber; and

determining the subscriber information for communication to the particular subscriber based on the comparison.

31. (Previously presented) The method of Claim 30, wherein:

the particular virtual circuit couples the particular subscriber to a particular one of a plurality of access servers;

the path information for the particular subscriber further identifies an access server assigned to the particular subscriber; and

the step of determining further comprises determining the subscriber information for communication to the particular subscriber based upon the path information for the particular subscriber and an identifier of the particular access server coupled to the particular subscriber.

32. (Original) The method of Claim 31, wherein the particular access server comprises:

an interface coupled to the particular subscriber using the particular virtual circuit;
and
a controller coupled to the interface.

33. (Previously presented) The method of Claim 32, wherein:
the interface comprises a plurality of network line cards;
the path information for the particular subscriber further identifies a network line card assigned to the particular subscriber; and

the step of determining further comprises determining the subscriber information for communication to the particular subscriber based upon the path information for the particular subscriber and an identifier of a particular network line card coupled to the particular subscriber.

34. (Previously presented) The method of Claim 30, wherein the particular virtual circuit pre-assigned to the particular subscriber is associated with the particular subscriber using a virtual path identifier and a virtual channel identifier.

35. (Previously presented) The method of Claim 30, wherein the path information for the particular subscriber comprises a virtual path identifier and a virtual channel identifier associated with the virtual circuit assigned to the particular subscriber.

36. (Original) The method of Claim 30, wherein the subscriber information comprises information used to configure a communication device associated with the particular subscriber.

37. (Original) The method of Claim 30, wherein the subscriber information comprises at least one Internet protocol address for communication to the particular subscriber.

38. (Previously presented) An access server, comprising:
an interface coupled to a plurality of subscribers using a communication network and operable to receive a communication from a particular subscriber using a particular one of a plurality of virtual circuits associated with the communication network; and
a controller coupled to the interface and operable to communicate a request to an information server for determining subscriber information associated with the particular subscriber based on a comparison between path information for the particular subscriber and the particular virtual circuit used to receive the communication from the particular subscriber, the path information for the particular subscriber identifying a virtual circuit that is pre-assigned to the particular subscriber for communicating with the access server, the request identifying the particular virtual circuit used to receive the communication from the particular subscriber.

39. (Original) The access server of Claim 38, wherein the controller is further operable to communicate the subscriber information to the particular subscriber.

40. (Original) The access server of Claim 38, wherein the request comprises:
interface information identifying the interface coupled to the particular subscriber;
virtual circuit information identifying the particular virtual circuit; and
access server information identifying the access server.

41. (Original) The access server of Claim 38, wherein the request comprises a RADIUS protocol request.

42. (Original) The access server of Claim 38, wherein the request comprises a trivial file transfer protocol request.

43. (Previously presented) A method for determining subscriber information, comprising:

receiving a communication from a particular one of a plurality of subscribers using a particular one of a plurality of virtual circuits associated with a communication network; and

communicating a request to an information server for determining subscriber information associated with the particular subscriber based on a comparison between path information for the particular subscriber and the particular virtual circuit used to receive the communication from the particular subscriber, the path information for the particular subscriber identifying a virtual circuit that is pre-assigned to the particular subscriber for receiving communications from the particular subscriber, the request identifying the particular virtual circuit used to receive the communication from the particular subscriber.

44. (Original) The method of Claim 43, further comprising communicating the subscriber information to the particular subscriber.

45. (Original) The method of Claim 43, wherein the request comprises:
interface information identifying an interface of an access server coupled to the particular subscriber;

virtual circuit information identifying the particular virtual circuit; and
access server information identifying the access server.

46. (Previously presented) The method of Claim 43, wherein the request comprises a RADIUS protocol request.

47. (Previously presented) The method of Claim 43, wherein the request comprises a trivial file transfer protocol request.

48. (Previously presented) A computer program for determining subscriber information, the program encoded on a computer-readable medium and operable to execute the following steps:

receiving a communication from a particular one of a plurality of subscribers using a particular one of a plurality of virtual circuits associated with a communication network;

storing subscriber information for the plurality of subscribers;

storing path information for the plurality of subscribers, wherein the subscriber information for the particular subscriber is indexed by the path information for the particular subscriber, the path information for the particular subscriber identifying a virtual circuit that is pre-assigned to the particular subscriber for receiving communications from the particular subscriber;

comparing the path information for the particular subscriber to the particular virtual circuit used to receive the communication from the particular subscriber; and

determining the subscriber information for communication to the particular subscriber based on the comparison.

49. (Previously presented) The computer program of Claim 48, wherein:

the particular virtual circuit couples the particular subscriber to a particular one of a plurality of access servers;

the path information for the particular subscriber further identifies an access server assigned to the particular subscriber; and

the step of determining further comprises determining the subscriber information for the particular subscriber based upon the path information for the particular subscriber and an identifier of the particular access server coupled to the particular subscriber.

50. (Original) The computer program of Claim 49, wherein the particular access server comprises:

an interface coupled to the particular subscriber using the particular virtual circuit;
and

a controller coupled to the interface.

51. (Previously presented) The computer program of Claim 50, wherein:
the interface comprises a plurality of network line cards;
the path information for the particular subscriber further identifies a network line card assigned to the particular subscriber; and
the step of determining further comprises determining the subscriber information for communication to the particular subscriber based upon the path information for the particular subscriber and an identifier of a particular network line card coupled to the particular subscriber.

52. (Previously presented) The computer program of Claim 48, wherein the particular virtual circuit pre-assigned to the particular subscriber is associated with the particular subscriber using a virtual path identifier and a virtual channel identifier.

53. (Previously presented) The computer program of Claim 48, wherein the path information for the particular subscriber comprises a virtual path identifier and a virtual channel identifier associated with the virtual circuit assigned to the particular subscriber.

54. (Original) The computer program of Claim 48, wherein the subscriber information comprises information used to configure a communication device associated with the particular subscriber.

55. (Original) The computer program of Claim 48, wherein the subscriber information comprises at least one Internet protocol address for communication to the particular subscriber.

Attorney's Docket:
062891.0328

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Appendix B

Attorney's Docket:
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Appendix C



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Appendix D





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